

Caloundra South Integrated Transport Strategy

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PLANS AND DOCUMENTS

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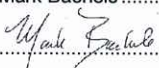
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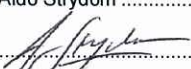
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Glossary

MMTC	The 'Multi Modal Transport Corridor' — a regional corridor proposed to link Caloundra Road to Kawana and the Sunshine Motorway. The MMTC comprises the Kawana Arterial, CAMCOS rail line and Kawana Way
CAMCOS	Caboolture to Maroochydore Corridor Study — proposed rail line (or other public transport) connecting the Brisbane suburban network at Beerwah with Maroochydore
TMR	Department of Transport and Main Roads
SEQ	South East Queensland
SEQIPP	South East Queensland Infrastructure Plan and Program
IRTP	Integrated Regional Transport Plan
CSEQ	Connecting South East Queensland — the draft IRTP
TAFE	Technical and Further Education
TDM	Travel Demand Management
GFA	Gross Floor Area
LRT	Light Rail Transit
PCNP	Principal Cycle Network Plan
CPTED	Crime Prevention through Environmental Design

AMENDED IN RED
13 JUN 2012
By: [Signature] (name)
of the ULDA

1. Introduction

1.1 Project description

The Caloundra South project will involve the creation of a master planned project on a 2,310 ha site in single ownership on the south western edge of Caloundra, on the Sunshine Coast. The site is located alongside the Bruce Highway adjacent to the existing Caloundra Aerodrome and 5 km southwest of the Caloundra CBD.

Development of Caloundra South will be guided by a strategic vision of a healthy, prosperous, culturally, socially and economically diverse community which embraces sustainable technologies and lifestyle practices. The neighbourhoods, centres and employment areas will be linked by a public transport and active transport network to a vibrant and thriving Town Centre. By creating a strong and sustainable economy that offers a diversity of employment opportunities, residents will be encouraged to live, work and play in Caloundra South thus reducing the impact of travel. The design and layout of the active transport network will encourage a mode shift away from car based travel, and will support the ideal of Caloundra South as a '15 minute city'. Caloundra South will be seen as a place for sustainable living and a place where you don't need to use your car for every trip.

In order to achieve this vision, a number of key outcomes have been identified in the fields of *sustainability, economic development, strong communities, natural environment and integrated transport*.

1.2 Report intent

To inform the Caloundra South planning process, the Caloundra South Integrated Transport Strategy (this study) addresses the transport planning requirements for the development to achieve the overall vision for Caloundra South.

* The aim of the transport strategy is to identify an effective integrated transport system that will:

- reduce the need to travel
- reduce trip lengths
- provide a choice of travel options
- promote sustainable transport options
- be safe and easy for people to access goods, services and destinations
- encourage increased mode share for public transport and active modes
- allow safe and efficient delivery of freight
- minimise the need for transport infrastructure
- provide equity of access for those with or without a car.

* This report has been prepared as a master planning document that identifies a transport strategy addressing a number of key elements. More detailed assessment will be required for subsequent applications to define and design the road network including detailed traffic reports for internal roads, intersections, etc.

By: *[Signature]* (name)
of the *[Signature]*

Three key outcomes of the Integrated Transport Strategy have been identified which aim to achieve as best possible the ideals listed above:

- develop a transport network that provides for future movement needs, facilitates sustainable forms of transport and supports connected communities
- provide an urban form, settlement patterns structure and demand management measures that increases mode share of sustainable transport such as walking, cycling and public transport over private vehicle use
- increase access to, and awareness of, options for sustainable travel to reduce dependence on private car travel.

A range of objectives have also been identified to help achieve each the desired outcomes, and a package of strategies developed to achieve those objectives.

The outcomes, objectives and strategies are detailed below (those strategies not detailed as part of this report are marked with an asterisk *).

1.2.1 Key outcomes (1)

Develop a transport network that provides for future movement needs, facilitates sustainable forms of transport and supports connected communities:

Table 1-1: Key outcomes (1)

Objectives	Where addressed
Make provision for the CAMCOS corridor through the site, including provision a railway station within Caloundra South.	▪ public transport strategy ▪ land use plan.*
Develop a 'dedicated bus corridor' with facilities for bus, bicycle and pedestrian as well as road traffic as a spine for the development.	▪ public transport strategy ▪ road network strategy ▪ cycle and pedestrian strategy.
Develop a network of on- and off-road bicycle routes to support all levels of cyclists.	▪ cycle and pedestrian strategy.
Provide a local road network that operates at an acceptable level and provides for intra and inter-regional connectivity.	▪ road network strategy.
Implement best practice for local neighbourhood and street design to provide for streets that are designed for multiple classes of users (including pedestrians, cyclists and buses as well as cars).	▪ walking and cycling strategy ▪ road network strategy ▪ urban design strategy.*
Accommodates the extension of the Sunshine Motorway from Caloundra Road to Roys Road.	▪ road network strategy.

Make provision for an East-West link connecting into the movement network that is currently being investigated by DTMR

Where an inconsistency exists between the Transport Strategy and Master Plan, the Master Plan prevails.

1.2.2 Key outcomes (2)

Provide an urban form, settlement patterns structure and demand management measures that increases mode share of sustainable form of transport such as walking, cycling and public transport over private vehicle use.

Table 1-2: Key outcomes (2)

Objectives	Where addressed
Co-locate uses in centres to maximise opportunities for mixed use trips.	- land use strategy* - centres strategy*.
The Town Centre is developed as the main urban centre in Caloundra South and the principal focus for community facilities and service delivery.	- land use strategy* - centres strategy* - retail strategy* - commercial strategy* - urban design strategy* - public transport strategy - road network strategy - walking and cycling strategy.
Priority public transport lanes are provided within major roads.	- public transport strategy - road network strategy.
Promote a high quality environment that supports pedestrian movements and cycling.	- land use strategy* - urban design strategy* - walking and cycling strategy.
Development in centres and employment precincts to provide end-of-trip facilities for cyclists.	- walking and cycling strategy - urban design strategy.*
Communities are designed to ensure that TransLink minimum service levels for public transport coverage are met.	- public transport strategy - land use strategy.*
Transport infrastructure, services and land use planning is integrated by sequencing growth areas and aligning transport investments.	staging strategy.*
Provide maximum rather than minimum parking requirements in accordance with latest best practice for urban area.	travel demand management strategy.

1.2.3 Key outcomes (3)

Increase access to and awareness of options for sustainable travel to reduce dependence on private car travel:

Table 1-3: Key outcomes (3)

Objectives	Where addressed
Implement a range of measures to improve travel choices including education and marketing	Travel demand management strategy
Provide innovative solutions to transport needs including cycle hire facilities and community car clubs	Travel demand management strategy

1.3 Preferred landuse pattern

The preferred landuse plan for Caloundra South is shown below in Figure 1-1 and identifies the landuse and high level transport network.

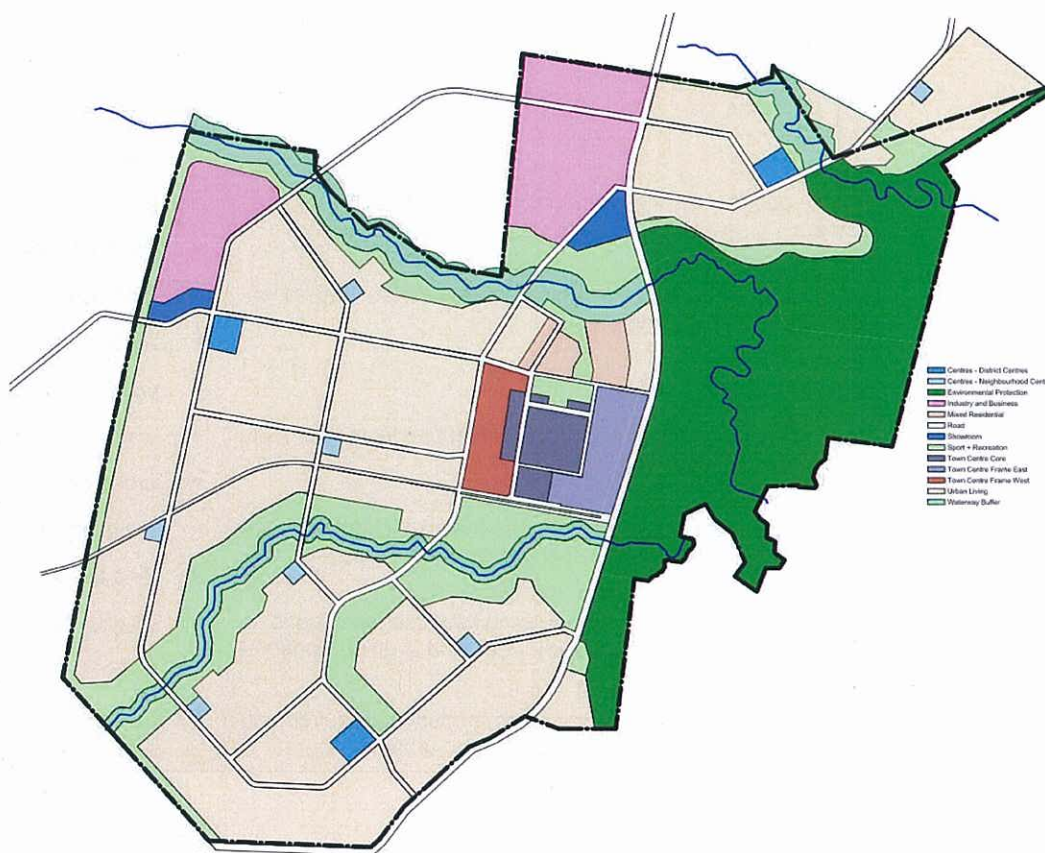


Figure 1-1: ^ Caloundra South landuse plan

2. Regional context and travel needs assessment

2.1 Regional context

Caloundra South is a 2,310 ha Greenfield site located approximately 5 km southwest of Caloundra and approximately 20 km south of Maroochydore. It is situated between the Bruce Highway and Pelican Waters/Golden Beach. Maroochydore is the Principal Activity Centre for the Sunshine Coast while Caloundra and Caloundra South are defined as Major Activity Centres in the South East Queensland Regional Plan (the Regional Plan). Other key regional centres within 30 km of Caloundra South include Mooloolaba, Kawana, Sippy Downs/Palmview, Beerwah, Landsborough and Nambour.

The Caloundra South site location is shown in Figure 2-1 below:

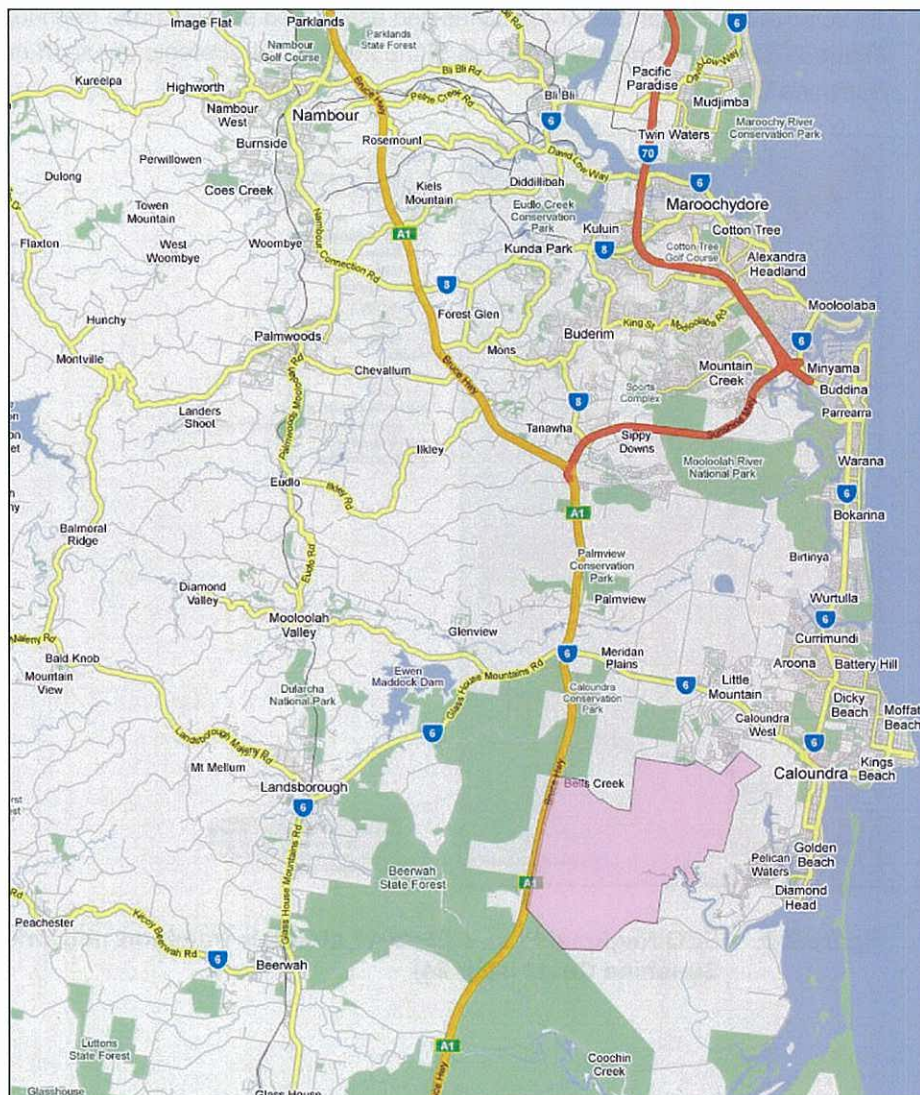


Figure 2-1: Caloundra South location

An overview of the transport network planning context for the Sunshine Coast region is provided below.

2.1.1 The South East Queensland Regional Plan 2009-2031 (Part D12 Integrated Transport)

The South East Queensland Regional Plan 2009–2031 provides the framework for managing growth, land use and development in the South East Queensland (SEQ) region. It represents a review of the SEQ Regional Plan 2005 to respond to the emerging regional growth management issues. Population projections have been extended to 2031 and the implications for accommodating growth in SEQ have been examined and addressed.

The Part 12 Integrated Transport Desired Environmental outcome is *“A connected and accessible region based on an integrated transport system that is planned and managed to support more compact urban growth and efficient travel; connects people, places, goods and services; and promotes public transport use, walking and cycling.”*

To achieve this, a number of principles and associated policies have been identified. Figure 2-2 identifies the key elements of the 2009–2031 strategic transport networks for the Sunshine Coast.

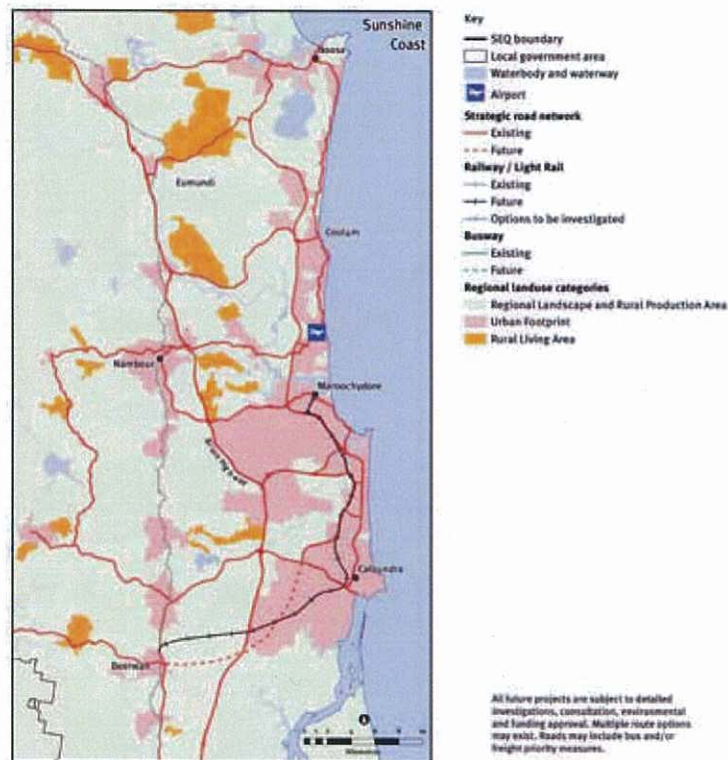


Figure 2-2: SEQ Regional Plan 2009–2031 strategic transport network for the Sunshine Coast (Map 24)

2.1.2 South East Queensland Infrastructure Plan and Program 2010–2031

The South East Queensland Infrastructure Plan and Program (SEQIPP) 2010–2031 outlines the government's infrastructure priorities and identifies the transport investment program for the Sunshine Coast, to support the SEQ Regional Plan. For the Sunshine Coast, it focuses on supporting greater self-containment of travel and economic growth within the region.

The program aims to:

- provide improved access between Maroochydore and Caloundra and emerging population centres (such as Caloundra South), including improved public transport
- increase the capacity of the North Coast Rail line and upgrade connections between the rail line and coastal activity centres
- enhance the safety and efficiency of the Bruce Highway
- accelerate the development of the Principal Cycle Network
- investigate the long term transport requirements in the subregion and preserve transport corridors to cater for future growth.

Key projects in the vicinity of the Caloundra South area are shown in Figure 2-3 and are listed below:

- SC1 Bells Creek connection – Bruce Highway to Caloundra Road
- SC2 Bruce Highway Interchanges, Johnstone Road to Bells Creek Road
- SC8 Sunshine Coast Health Precinct
- SC16 CoastConnect – Caloundra to Maroochydore quality bus corridor
- SC17 CAMCOS: Beerwah to Maroochydore
- SC20 MMTc: Caloundra Road to Maroochy Boulevard
- SC21 Bruce Highway upgrade – Caboolture to Caloundra Road
- SC22 Bruce Highway upgrade – Caloundra Road to Sunshine Motorway.

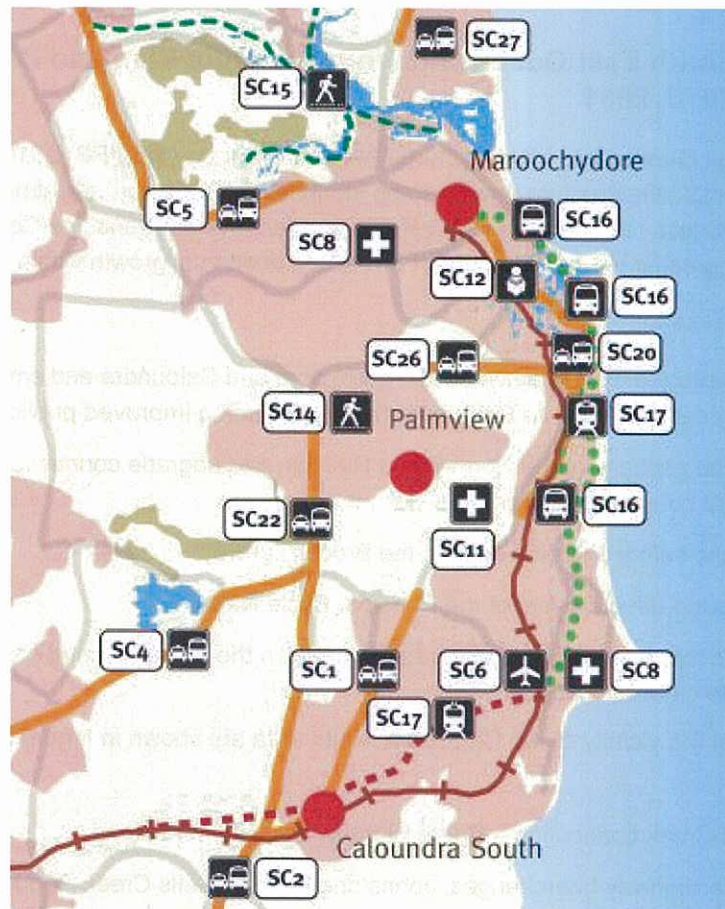


Figure 2-3: SEQIPP projects for the Sunshine Coast

2.1.3 Connecting SEQ 2031

The Connecting SEQ (CSEQ) 2031 was released for public consultation in 2010, and adopted in 2011. It presents the Queensland Government's long term plan to develop a sustainable transport system in the south east Queensland region. For each council area, it identifies the transport issues and challenges, sets mode share targets, and identifies a series of strategic transport projects. The projects identified for the Sunshine Coast Regional Council are shown in Figure 2-4.

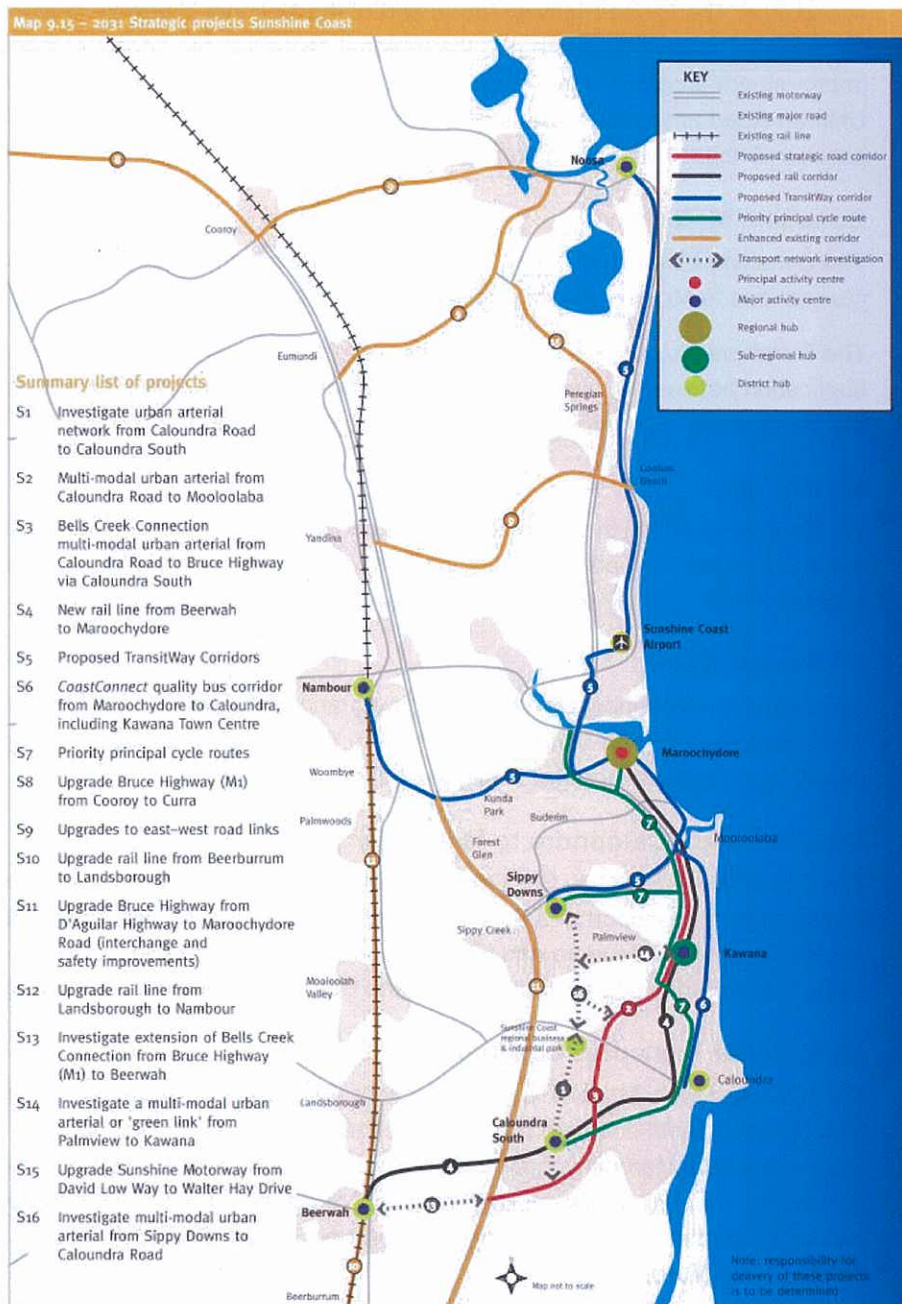


Figure 2-4: CSEQ 2031 projects for the Sunshine Coast Regional Council

2.2 Regional transport network

The key elements of the regional transport network surrounding the Caloundra South site are listed and discussed below:

Bruce Highway

The Bruce Highway is a state controlled highway, and in the vicinity of the proposed connection to Caloundra South is a four lane divided highway standard, with a 100 km/h speed limit. The Bruce Highway forms part of the National Highway, and provides a vital connection between Brisbane and the regional centres to the north. Recent road improvement programs have seen additional lanes being constructed progressively between Uhlman Road and Caboolture, increasing the highway capacity and improving safety between Brisbane and Caboolture.

Sunshine Motorway

The Sunshine Motorway connects the Bruce Highway to Noosa, providing further connections to Mooloolaba, Maroochydore and Coolumb.

The Sunshine Motorway has had a number of upgrades in recent years, including duplication between Sippy Downs and the Kawana Arterial, a new bridge across the Maroochy River and duplication between Maroochydore Road and David Low Way.

Nicklin Way

Nicklin Way provides the main connection between Caloundra and Mooloolaba (via the Sunshine Motorway), also providing access to the coastal strip/communities. Until the Kawana Arterial comes on line, it is the key north-south connector.

Caloundra Road

Caloundra Road connects the Bruce Highway and Caloundra, as well as providing a connection to Sunshine Motorway and Nicklin Way. It has recently been upgraded from two to four lanes between the Bruce Highway and Pierce Avenue.

CoastConnect Caloundra to Maroochydore

The CoastConnect Quality Bus Corridor project is currently being undertaken by the Department of Transport and Main Roads (TMR). This project will provide a priority bus corridor between Caloundra and Maroochydore, with an increase in the bus services in the area. The terminus point in Caloundra is the Cooma Terrace bus interchange.

Multi Modal Transport Corridor (MMTC)

The proposed Multi Modal Transport Corridor (MMTC) will include the Kawana Arterial - a high-speed, arterial-standard road designed to reduce travel times between Caloundra, Mooloolaba and Maroochydore and reduce congestion on Nicklin Way. It will also incorporate (in part) a new rail line between Creekside and Maroochy Boulevard, which is part of the Caboolture to Maroochydore Corridor Study (CAMCOS) railway link between Beerwah and Maroochydore.

The corridor will improve public transport links by integrating road, rail, bus, pedestrian and cycle infrastructure and enhance access to the Sunshine Coast's major commercial, residential, educational, health and sporting developments. The proposed infrastructure and staging for this corridor is currently being reviewed by TMR.

CAMCOS (Caboolture to Maroochydore Corridor Study)

The future public transport line will link Beerwah to Maroochydore, with key stations located at Caloundra South, Caloundra, Kawana Town Centre, Mooloolaba and Maroochydore. The timing and delivery of CAMCOS is currently being reviewed by TMR, however a preferred alignment has been chosen.

2.3 Preferred landuse plan review

The latest ^{indicative} ~~preferred~~ landuse plan is shown in Figure 1-1. The key transport network elements of the plan are:

- road network that provides connections to the Bruce Highway and the Kawana Arterial. Connections are also provided to Caloundra Road
- local road network that provides access throughout the Caloundra South development area
- proposed CAMCOS rail line passing through the site (east to west)
- proposed Kawana Arterial passing through the site (south to north direction).

Overall, the plan provides for good connectivity with the external transport network, and provides for a good level of accessibility and connectivity within the site itself. Further comments and recommendations regarding elements of the transport network are detailed in the later sections of this report.

2.4 Key destinations (external to Caloundra South)

In addition to the trip generators and attractors within the Caloundra South development, the surrounding developed town centres and regional centres will also offer an attractive, alternative destination for work, education, recreation and other social purpose trips. A brief discussion of the likely destinations within the surrounding region is provided below.

2.4.1 Employment centres

In addition to the jobs created within the commercial and industrial precincts within Caloundra South, it is likely that up to 60% of workers will travel to destinations outside Caloundra South. Typically, the average time people will travel (by car) to their place of employment is 25 minutes¹. The centres of Caloundra, Kawana and Maroochydore are likely to offer the greatest proportion of employment opportunities, with Nambour, Sippy Downs/Palmwoods, Mooloolaba, and Beerwah also offering employment opportunities.

Residents may also travel as far as Caboolture and Brisbane for work, as the Bruce Highway presents a high quality high speed transport corridor link (as does the North Coast Rail Line, though less convenient).

¹ South East Queensland Travel Survey, 2008-9 (SEQTS) – PB analysis conducted for this project

2.4.2 Retail/recreation

As with the employment locations, Caloundra, Kawana, Maroochydore, Nambour and Caboolture all offer retail and commercial destinations, with some trips possibly extending up as far as Noosa to the north and as far south as Brisbane (though these may be more likely on weekends due to the distances involved).

Recreational centres will be similar to above, with the coastal area between Pelican Waters and Noosa also a popular destination. Trips will also extend west to the hinterland area and south towards Brisbane.

2.4.3 Education

There will be a number of primary and secondary schools located within the Caloundra South development including private schools. However, a number of trips will also be external to the site for those wishing to access particular schools, universities and other further education facilities in the surrounding areas.

Key destinations may include:

- University of the Sunshine Coast (Sippy Downs)
- Sunshine Coast Institute of TAFE (Mooloolaba, Nambour, Maroochydore, Noosa and Caloundra)
- multiple private or specialist schools (primary and secondary) in the surrounding towns and regional centres.

2.4.4 Distribution of external trips

For the purpose of identifying the likely distribution for external trips, a review of the Caloundra South SLA 2006 Journey to Work statistics were undertaken (extracted from the 2006 Census). This identified the destination for work trips for people residing in the Caloundra South SLA. External trips to the site will also be for the purposes of education, shopping/retail and recreation/social. Based on this data review, and giving consideration to the location of commercial and education precincts, and the future development and growth of areas such as Beerwah, Sippy Downs/Palmwoods and Maroochydore, the following distribution of external trips is assumed for Caloundra South:

- Brisbane/Caboolture: 20%
- Nambour/Sippy Downs: 15%
- Maroochydore (and surrounding suburbs): 25%
- Beerwah: 10%
- Caloundra (and surrounding suburbs): 30%

The likely distribution of the trips external to the Caloundra South site is shown in Figure 2-5. It is assumed that the majority of the external trips will be headed for the corridor between (and including) Caloundra to Maroochydore, due to their close proximity and greater concentration of employment, recreation and education opportunities.

The impact that this traffic distribution has on the road network is discussed in Section 5.

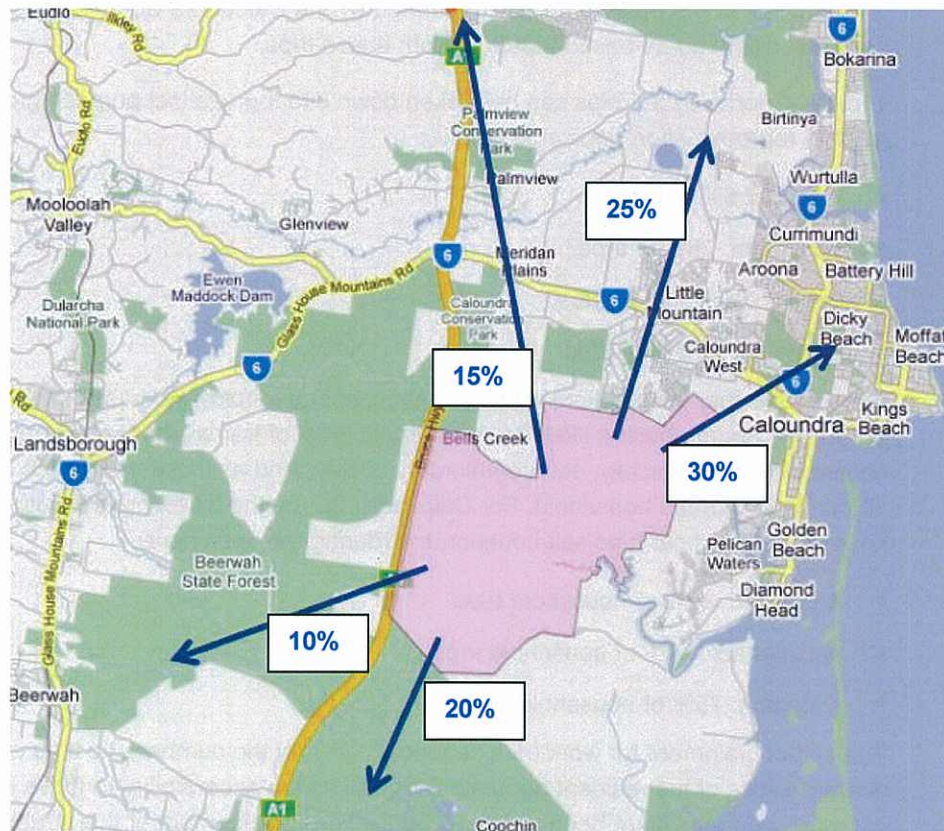


Figure 2-5: Caloundra South external trip distribution

2.5 Travel characteristics

The preferred landuse for Caloundra South comprises several precinct types:

- **Residential communities:** a mix of densities and forms, ranging from detached dwellings to high density multi story dwellings.
- **Major activity centre:** retail, commercial, recreation and entertainment facilities combined with medium and high density residential development.
- **District activity centres:** retail and commercial uses to support surrounding residential areas.
- **Local activity centres:** local shops usually also located in the vicinity of local schools.
- **Industry and enterprise:** commercial development and light industry providing for employment nodes/opportunities.
- **Conservation and open space:** open space parks, recreation and sporting facilities, conservation areas/parks.
- **Community facilities:** schools, higher education, aged care, health services and other community facilities.

The above land uses all have varying travel characteristics, and their contribution to the traffic volumes on the road network will vary throughout the day.

The majority of the traffic volumes generated by the Caloundra South development will be associated with home based trips and work based trips.

Typically, home based trips can be broken down into four distinct purpose groups, with the relative representation² indicated below:

- work: 37.5% of trips
- education: 25% of trips
- social/other: 25% of trips
- shopping: 12.5% of trips.

As there are many education, retail, recreational and employment uses identified within Caloundra South, there is likely to be a certain level of travel self-containment for those household trips. Typically, self-containment is classified as those trips which are less than 15 minutes from the household. For Caloundra South, the following is assumed for household based car trips self-containment (during the peak hour):

- education: 80% of household trips
- social/other: 50% of household trips
- shopping: 75% of household trips.

The self-containment for work trips depends highly on the number and type of job, demographics of the resident population as well as the accessibility to those jobs. Two different scenarios have been tested as part of the development of this strategy, 30% and 40% internalisation (for work trips).

Reduction in the car based trips generated by households can be reduced through a number of measures, where the trips are instead made by walking, cycling, car-pooling or public transport.

The possible reductions are associated with:

- good site design: aspects such as permeable street networks, good quality pedestrian network, comfortable walkable distances between trip attractors, nearby activity centres etc. may result in up to 10% reduction in vehicle trips³
- high quality cycle networks that provide direct trips and excellent facilities at employment and other destinations
- close proximity to main public transport corridor (bus): where the household is located within 400 m of a high frequency public transport service (in this case bus), reductions of up to 25% may be achieved.⁴
- close proximity to rail station: where the household is located within 800 m of a railway station reduction of up to 50% may be achieved (though this is dependent on the quality and coverage of the rail service)⁵. 20% to 30% is likely for the Caloundra South site.

² SEQTS, PB analysis

³ e.g. see R. Falconer *Living on the Edge: transport sustainability in Perth's Liveable Neighbourhoods*. Murdoch University, 2008

⁴ SEQTS, PB analysis

⁵ R. Cervero, G.B. Arrington et al. TRCP Report 128: *Effects of TOD on Housing, Parking and Travel*. Washington DC: Transportation Research Board, 2008

2.6 Implications of ^{indicative} preferred land use plan

The latest figures provided by Stockland indicate that Caloundra South will hold a population of 45,702 people, a 20,296 dwelling yield and 19,500 jobs. Further to that, there will also be community facilities, retail and commercial/industrial use and a number of education facilities (primary and secondary schools).

The size and scale of the development will require an efficient transport network that not only moves people and goods within the development itself, but facilitates efficient travel to areas external to the site.

A high level assessment of the trip generation of the site (internal and external) and the implication this has on the road network requirements is provided below.

2.6.1 Trip generation

Employment trips

The Sunshine Coast Population and Housing Fact Sheet (May 2009, Department of Infrastructure and Planning) identifies the population of the Sunshine Coast by age group, where adults (years 15 old and above) represent approximately 80%.

The Sunshine Coast Regional Council Preliminary Regional Profile 2008 identifies that approximately 60% of the adult population are employed or seeking employment.

The earlier estimates for self-containment levels identified a 30-40 % level of self-containment for work trips (refer Section 2.4).

Therefore, under the 30 % self-containment (for work trips) scenario, of the 19,500 jobs forecast for Caloundra South, 6,581 of those will be taken up by Caloundra South residents, with the remaining 12,919 jobs being filled by people external to the Caloundra South site. Under the 40% self-containment scenario, of the 19,500 jobs forecast for Caloundra South, 8,775 of those will be taken up by Caloundra South residents, with the remaining 10,725 jobs being filled by people external to the Caloundra South site. This represents a 34% and 45% internal take up of jobs for each scenario respectively.

The main employment centres are located near the transit centre or in close proximity to the dedicated bus corridor, which will encourage some mode shift to public transport services. It is assumed that up to 5% of the external work trips will utilise public transport. This equates to a total of 646 trips and 536 trips for the 30% and 40% scenarios respectively.

Not all of the jobs filled by external people will be typical Monday to Friday 9–5 positions, where some workers will arrive in and depart the Caloundra South site outside of the typical weekday peak period. Also, not all of the external work trips will arrive in Caloundra South within the one peak hour, the inbound activity is more likely to be spread over a 2–3 hour period. For the purpose of this assessment it is assumed that a third (1/3) of the inbound employment trips arrive in the morning peak period.

Based on the above, the total number of external inbound employment trips in the morning peak period is 4,091 trips and 3,396 trips for the 30% and 40% scenarios respectively. There may some reduction in this number should carpooling or higher take up of public transport occur.

Household trips

The dwelling yield of Caloundra South is:

- detached dwelling: 13,175
- semi attached dwelling: 2,552
- attached dwelling: 3,770
- retirement housing: 800.

The trips generated by these dwellings will be for a number of purposes, generally broken down into: work, education, shopping and social/other.

Typical peak period trip generation rates for the four dwelling types are:

- detached dwelling: 0.9 trips per dwelling
- semi attached dwelling: 0.5 trips per dwelling
- attached dwelling: 0.4 trips per dwelling
- retirement housing: 0.2 trips per dwelling.

The total number of peak period trips generated by the residential component of Caloundra South is 14,801 trips. These trips account for both inbound and outbound trips.

Figure 4-4 and Figure 4-9 in Section 4 identify the 400 m and 800 m walking catchments surrounding the bus corridors and the rail station respectively. For those residences located within each of these buffer zones, there are likely to be reduced car usage, and an increase in public transport mode share (as specified in Section 2.4). A review of these figures has allowed the approximate site coverage for each site component within these buffer zones to be identified. This represents the proportion of the residences within each zone that will have reduced car usage, and therefore reduced vehicle trips generated. A further reduction in household vehicle trips was assumed based on the development being conducive to walking and cycling. Overall, a reduction of 3,491 trips assigned to public transport, walking and cycling in the peak period which equates to a non-car mode share of 24%.

A proportion of the trips will be self-contained within the Caloundra South development, i.e. those jobs taken up by residents, trips to the local schools, shopping precincts, recreation areas etc. The proportion of the self-contained trips for each trip purpose was identified in Section 2.4.

The residential trip generation estimates can further be broken down into inbound and outbound trips, with an 80:20 OUT/IN split typically assumed for the morning peak period, with this reversed in the afternoon peak.

Table 2-1 presents the estimated morning peak period trip generation of the Caloundra South residential areas, for both internalisation (work trips) scenarios. This take into account the mode shift to public transport services, levels of self-containment for each trip purpose and the likely distribution between inbound and outbound trips. It shows that for the 30% scenario, there will be an estimated 467 inbound trips and 4,835 outbound trips generated by the residential development areas. For the 40% scenario, there will be a drop in the estimated outbound trips generated by the residential development areas (decrease from 4,835 to 4,411 trips).

Table 2-1: Household trip generation — morning peak period

Trip purpose	Self contained trips	External trips total	External trips outbound	External trips inbound
<i>30% internalisation of work trips</i>				
Work	1,272	2,969	2,969 ⁶	
Education	2,262	565	452	113
Social/other	1,414	1414	1131	283
Shopping	1,060	353	283	71
Total	6,008	5,302	4,835	467
<i>40% internalisation of work trips</i>				
Work	1,629	2,545	2,545 ⁷	
Education	2,262	543	452	113
Social/other	1,414	1,358	1131	283
Shopping	1,060	339	283	71
Total	6,433	4,877	4,411	467

The other land uses such as recreational facilities, education facilities, community facilities and retail precincts will also generate levels of trip generation; however it is assumed that these will be covered by the self-containment trips for the residential areas. More detailed trip generation and distribution would need to be conducted at the detailed planning stages to determine the specific requirements of the transport network to support this travel demand. This assessment has been high level only, and reflects the amount of site detail available at the time of this report.

⁶ All of the external work trips are assumed to be outbound in the morning peak period. Inbound external work trips are identified separately.

⁷ All of the external work trips are assumed to be outbound in the morning peak period. Inbound external work trips are identified separately.

3. Walking and cycling strategy

3.1 Vision

The vision for Caloundra South is for a healthy, prosperous and diverse community which embraces sustainable technologies and lifestyle practices.

It has been conceived as a number of distinctive neighbourhoods and villages incorporating residential, commercial and retail land uses and a range of active and passive open spaces catering for local population and regional visitors.

The various neighbourhoods and centres will be linked through safe and convenient movement systems offering a choice of transport modes.

3.2 Policy and regional context review

3.2.1 Shaping up

Shaping Up (Queensland Transport) is a state government document providing design guidelines for 'shaping urban communities to support public transport, walking and cycling'.

Principles particularly important to walking and cycling that it espouses include:

- ensuring walking, cycling and public transport are as attractive as possible in their own right
- coordinating land use and transport so that public transport services can be provided efficiently and effectively
- providing transport stops that are accessible, safe and attractive to use and integrated into the overall design of the neighbourhood
- planning for cycles as a means of transport as well as recreation
- providing safe, attractive, connected pedestrian routes, through means including permeable street networks and provision of active frontage on all roads and streets.

3.2.2 Easy Steps

Easy Steps (Queensland Transport, 2005) is a document designed to assist with planning and developing a safe and attractive walking environment.

3.2.3 Queensland Cycle Strategy

The Queensland Cycle Strategy (Queensland Department of Transport and Main Roads, 20011-2012) has the vision '*more cycling, more often on safe, direct and connected routes*'.

The strategy has four priority areas for action, these being:

- Building safe direct and connected cycle networks
- Growing a cycling culture
- Creating cycle-friendly communities
- Developing a cycling economy

3.2.4 Cycle South East

Cycle South East is the Queensland government strategy for cycling in SEQ. It has set a target of 8% of all trips to be made by bicycle in 2011. The strategy consists of nine elements, which are listed in Table 3-1 below.

Table 3-1: Cycle South East strategy elements

Key element	Examples, themes, topics
Transport integration	▪ incorporate cycling into transport planning process, including road and public transport planning.
Integration with public transport	▪ routes to stations ▪ facilities at stations ▪ cycles on vehicles.
Land use planning	▪ incorporate cycling into early stages of land use planning ▪ design neighbourhoods to support non-motorised transport.
Safety	▪ safe routes ▪ upgrade intersections ▪ pedestrian/cycle safety on paths ▪ accommodate needs of all types of cyclists.
Education	▪ education programmes to improve safety for cyclists, pedestrians and motorists ▪ encourage respect.
Encouragement	▪ promote cycling, especially their environmental, economic and health benefits.
Enforcement	▪ enforcement of violation of traffic rules.
Infrastructure	▪ all types of cyclists ▪ on- and off-road routes.
End of trip facilities	▪ parking and storage ▪ lockers, showers etc. at public transport interchanges and major destinations.

3.2.5 SEQ Principal Cycle Network Plan

The SEQ Principal Cycle Network Plan (PCNP) is a plan to guide bicycle network planning in SEQ, through identification and mapping of current and desired future principal bicycle routes.

It is designed to inform planning and construction of both local government and state controlled routes, to prioritise SEQIPP funding allocation and to assist with assessment of development applications.

For future planning, PCNP refers to 'future principal routes', 'future strategic routes' and a proposed 'coastal route'.

Future principal routes

Future routes are those which represent desired connections for future expansion of the network. Construction may not necessarily occur in the specified corridors and alternative alignments may be considered depending on future needs and design issues. This plan does not prioritise the delivery of any single future route over another.

Future strategic routes

In key areas earmarked for future development and where detailed land use planning has not been finalised by local governments, strategic future routes are shown using arrows to indicate broad directional flows.

Coastal route

The coastal route has been included as a future iconic cycling route for SEQ. When complete, it will provide a scenic and continuous cycle touring route from Tewantin in the north to Coolangatta in the south. It will also provide important links between major residential areas and activity centres along the coast.

The Principal Cycle Network for the Caloundra and surrounding areas as identified in the PCNP is shown in Figure 3-1.

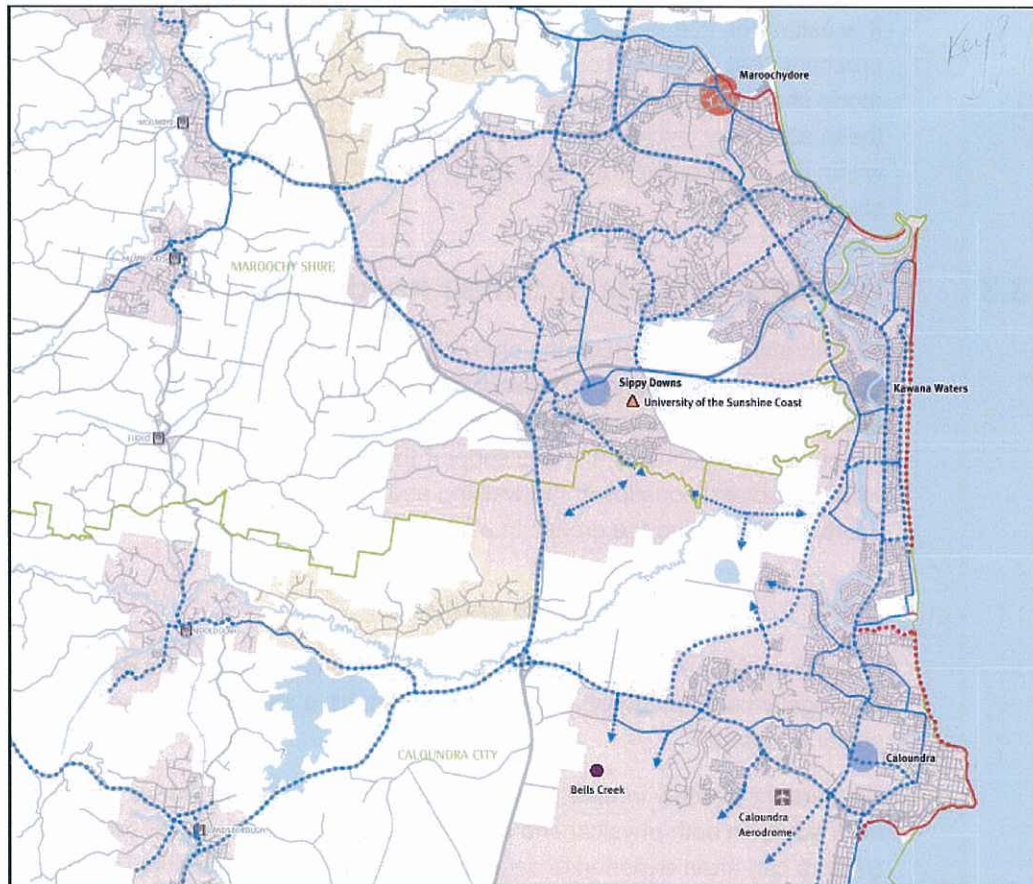


Figure 3-1: SEQ Principal Cycle Network Plan, Caloundra area

Key linkages into Caloundra South identified by the PCNP include:

- from Corbould Park – Racecourse Road alignment
- from Corbould Park – Kawana Arterial extension alignment
- from Caloundra West - Bellvista Boulevard alignment
- from Caloundra along CAMCOS corridor.

An indicative link has also been provided from Beerwah possibly following the CAMCOS corridor.

3.2.6 Connecting SEQ 2031

This plan produced in 2011 includes overarching principles for developing the active transport network which are:

- develop a connected network of safe active transport routes comprising major spines linking local walking and cycling networks for travel around the region's cities and towns
- integrate walking and cycling with public transport to extend its reach
- create a community culture that embraces walking and cycling.

It is estimated that in SEQ, the average resident makes 25 trips per week. From this it is proposed that if people could shift 2 of their 25 trips to cycling, the regional active transport mode share could be increased to 20%. The focus for this target is trips of less than 5 km as these are easily 'cycleable'. This plan will also see a focus on improving walking facilities within 400 m of public transport, and within 800 m of major public transport stations and stops.

3.3 Walkers, cyclists and their needs

As with any transport mode the characteristics of walkers and cyclists depends on their abilities or skill level and the type of trip. The needs of walkers and cyclists are not uniform and any strategy needs to take account of the different abilities and trip types to adequately set out effective interventions to support the growth of walking and cycling. The extent to which the characteristics of the walking and cycling network meets the needs of potential users will determine the growth in use.

3.3.1 Ability levels of walkers

A walker is defined in this strategy as a person on foot, in or on a device with wheels that can legally use a pathway, such as a skateboard, a person in a wheelchair, or a person pushing a pram.

Walkers vary widely in their physical and cognitive abilities. For example, children differ from adults in both physical and cognitive ability and also in their developmental maturity. Seniors can often experience decreased agility, balance and stamina than that of a younger adult. Such differences in abilities impact on their walking needs.

For the purposes of this strategy, the types of pedestrians have been organised into five key groups — children, adults, seniors, mobility impaired and/or sensory impaired and those on wheels. The various types of pedestrians, their typical characteristics and their needs are listed in Table 3-2.

Table 3-2: Ability levels for walkers

Type	Description	Needs
Children	The shorter height of children limits their ability to see over the top of objects, such as parked cars. Children also have reduced peripheral vision. Such characteristics affect a child's ability to scan their walking environment and can impact on sight lines, sign legibility, crossing locations and trip hazards. Typically, children also have a limited attention span and limited cognitive abilities. They are less accurate in judging speed and distance and have difficulty localising the direction of sounds. Children's lack of familiarity with traffic patterns and expectations can result in unpredictable or impulsive actions.	- prefer signalised or grade separated crossings - sign legibility - kerb detection - smooth surface to reduce trip hazards.
Adult walkers	Able-bodied adults are able to walk and run. Their cognitive or perceptual limitations are adequately catered for in standard design of facilities for pedestrians.	paved pathway.
Seniors, mobility impaired and/or sensory impaired	Seniors often experience reduced joint mobility, slower reflexes and less stamina than that of middle-aged and younger adults. This can result in a slower walking speed and a reduced ability to avoid dangerous situations. Older pedestrians also have less tolerance for adverse temperatures and environments. Agility, eyesight, hearing and mobility may be limited leaving senior pedestrians potentially more vulnerable. Mobility-impaired pedestrians are commonly thought of as using devices to help them to walk, ranging from canes, sticks and crutches to wheelchairs, walkers and prosthetic limbs. However, a significant proportion of those with mobility impairments do not use any visually identifiable device. Sensory impaired pedestrians are those that have partial or complete loss of at least one sense. These mostly include impairments to vision and hearing. These pedestrians may have less ability to scan the environment, respond to audible cues of traffic, and distinguish objects.	- clear and unobstructed path - positive direction signage - rest stops along walking routes and adequate shade and shelter from the elements - smooth, level, quality pathway surfaces - safe signalised crossing locations - provision of steps/ramps with handrails - lighting and surveillance - tactile paving.
On wheels	These include people in a wheeled vehicle (other than a bicycle) who can legally use a pathway. They include wheelchairs, motorised scooters, walkers with a pram, in-line skaters, skateboards and kick scooters.	- smooth, level surface. Ramps and signalised intersections - consistency in minimum pathway widths (including across roads) - passing places on narrow paths.

Source: Adapted from 'Pedestrian Planning and Design Guide' Land Transport NZ and Action Plan for Walking 2008.

3.3.2 Ability levels of cyclists

The ability level of cyclists affects their needs and comfort-level when cycling in certain environments. Table 3-3 below defines three cyclist types, and shows how cyclist needs differ between each group.

Table 3-3: Ability level for cyclists

Type of cyclist	Description	Needs
Beginner	Beginner cyclists are comprised of young children and beginner adults. They can be unpredictable and prefer full separation from other traffic, particularly when travelling along busy roads. Trips by beginner cyclists are commonly to school and shops and for recreation near their homes. Beginner cyclists often find it difficult interacting safely with vehicle traffic when not on traffic-calmed local streets. They prefer grade-separation or signalled intersections when crossing arterial roads.	- the highest degree of safety - comfort and personal security - low traffic speeds and traffic volumes - a good separation from traffic when trips require them to travel busy roads - minimal gradients - facilities for crossing busy roads, such as traffic signals.
Cautious	Cautious cyclists include those with basic competence and more experienced cyclists who are risk averse. Cautious cyclists prefer to ride on quiet two-lane roads, can manoeuvre past parked cars, and merge across and turn right from beside the centreline. They can cope with simple traffic signals and single-lane roundabouts that are designed for slow through traffic. When required to travel on-road cautious cyclists prefer cycle lanes and facilities at intersections. They are not well equipped to interact with faster traffic, multi-lane roads and multi-road roundabouts. They usually lack the confidence to defend a lane in narrow situations. Cautious cyclists are willing to accept some delay in order to avoid situations perceived as high risk.	- a high degree of safety - comfort and personal security - low traffic speeds and traffic volumes - visual separation from traffic when trips require them to travel busy roads - intersections that minimise conflicts with other traffic - good lighting for evening trips - direct and coherent routes - facilities that give them their own space.
Confident	Experienced cyclists interact assertively with traffic. They do not require specific cycle facilities, only the space on the road when in amongst faster/busier traffic situations. Experienced cyclists will defend a lane where there is not enough room, judge the merge across faster multi-lane traffic, use multilane roundabouts in most cases (though apprehensively), and will not usually divert to a cycle path.	- minimal delays - adequate road width to allow them their own space.

Source: Adapted from 'The Principles of Cyclist Network Planning' Land Transport NZ

3.3.3 Trip types

The needs of walkers and cyclists vary depending on the purpose of trip, as well as the abilities of each person. For the purposes of this strategy, six types of trip have been identified, to illustrate the typical needs of different walkers and cyclists. These trip types tend to have similar requirements. This is shown in Table 3-4 below.

Table 3-4: Trip types

Cycling trip type	Description	Specific needs
Utility	Utility trips include short trips to local shops, visiting friends, visiting local parks and play grounds and children playing on their bikes. Cycling distances are usually less than 3 km and cyclist speeds are typically lower than 15 km/h. Walking distances usually less than 1 km. Although these trips are made by all types of walkers, they tend to be made around residential neighbourhoods by Beginner and Cautious cyclists and those using other wheeled modes.	- direct and coherent routes - secure parking at or very close to destinations.
Educational	Educational trips include trips to local schools and childcare facilities. They also include the trips made by persons accompanying or ferrying children to and from school or childcare. Trips to tertiary education institutions are not included in this category since trip distance and user needs have more in common with commuter trips. Cycling distances are usually less than 3 km and cyclist speeds are typically lower than 15 km/h. Walking distances are usually less than 2 km. These trips are made mostly by children and adult walkers (accompanying children) but also include disabled pedestrians. Trips tend to be made by Beginner and Cautious cyclists.	- direct and coherent routes with minimal risk - secure parking at destinations.
Commuter	Commuter trips include adults commuting to work and trips for tertiary education. They also include any longer-distance utility trip. Regular commuters generally ride at speeds of 20 to 30 km/h. Average trip length for commuter cyclists is around 5 km with journeys up to 15 km. Average trip length for commuter walkers is around 2 km with journeys up to 8 km Most will choose a faster route at the expense of higher perceived safety, comfort and attractiveness. They are the main users of the Principal Cycle Network. Walkers tend to be adult walkers. These trips are made mostly by Cautious and Confident cyclists.	- direct and coherent routes with minimal delays - good lighting for evening trips - secure parking at or very close to destinations - end-of-trip facilities for changing clothes, lockers and showers.

Cycling trip type	Description	Specific needs
Sports	These are confident cyclists and joggers. These cyclists are prepared to claim their road space and often travel in groups of two or more and like to ride two abreast. Trips by sports cyclists are usually at high speeds greater than 25 km/h. Sports cyclists cycle over long distances, mainly along urban arterial or rural roads, and may seek challenging terrain.	- generous road widths - continuous training circuits.

Source: Adapted from 'The Principles of Cyclist Network Planning' Land Transport NZ

3.3.4 Required characteristics of the network

The first important component of a network is the street: all pedestrians and cyclists will use the local network at some time, whether to access their own home or to access other facilities (such as parks, schools, shops or offices) or to gain access to an off-road path.

Therefore it is important that the local street network be as 'friendly' as possible. This means that all streets should be provided with footpaths and street networks should be as direct as possible, and otherwise designed with cyclists and pedestrians in mind.

More generally, the requirements of a pedestrian and cycle networks are detailed in Table 3-5. In planning walking and cycling networks these characteristics need to be considered in conjunction with an understanding of the likely user to best provide for their needs.

Table 3-5: Main requirements of the walking and cycling network

Main requirement	Explanation
Coherence	Network completion: Centres are interconnected by a continuous network of routes and the network is accessible from residential areas. Match travel needs: the network can serve at least 70% of walking and cycling journeys
Directness	Directness of distance and time: minimise the need to deviate from the desired path of travel and minimise the stopping frequency
Safety	Safety: conflicts with vehicles, and between walkers and cyclists Security: CPTED and other design guidelines are followed to ensure personal security
Comfort	Ease of finding destinations: the network is signposted Comprehensibility: the design should make navigation of the facility obvious Minimise traffic nuisance by avoiding busy roads where possible. Minimise steep climbs and sharp turns, provide shelter from the elements
Attractiveness	Create a usable public space with open appearance which creates a feeling of public ownership.

There are a number of specific requirements for bicycle networks which can be different from the requirements for pedestrians, based on the very different characteristics of a moving bicycle. Key issues are:

- reducing encounters between cyclists and high volumes of fast moving traffic (through segregation into separate lanes on roads or separate paths off-road)
- reducing the speed difference between bicycles and other modes (including both vehicular traffic and pedestrians) where separation is impractical. This may be through the use of specific design features
- treating the crossing of a street or road by an off-road cycle path as an intersection (designed and built according to normal intersection design principles)
- building and managing all off-road cycle ways as recognised transport facilities similar to streets and roads (including line marking, design speed consideration, clearance, signage etc.)
- designing bicycle facilities for the efficiency, safety and comfort to suit the wide range of people who ride bicycle.

(Source: Queensland Cycle Strategy)

3.4 Design standards for cycle facilities

Key design standards for bicycle facilities are:

- Austroads Guide to Traffic Engineering Practice. Part 14: Bicycles
- QT Cycle Notes
- Australian Standard Manual of Uniform Traffic Control Devices. Part 9: Bicycle Facilities (AS 1742.9)
- Australian Standard Manual of Parking Facilities. Part 3: Bicycle Parking Facilities (AS 2890.3).

Some of the more important design standards relevant to planning for Caloundra South are reproduced below.

3.4.1 On-road cycle facilities

Combined parking/cycle lanes

Combined bicycle/parking lanes may be appropriate where there is a demand for both cycling and parking throughout the day.

It is important that these combined lanes are sufficiently wide so that cyclists do not need to swerve into traffic lanes to avoid open car doors. Preferred lane widths are shown in Table 3-6 below.

Table 3-6: Lane widths, combined parking/cycle lanes⁸

Road speed (km/h)	60 km/h	80 km/h
Desirable	4.0 m	4.5 m
Acceptable range	3.7 – 4.5 m	4.0 – 4.7 m

Appropriate 'safety strip' treatment should be applied to segregate cycle and car spaces. Examples include:

By: J. H. Koe (name)
 of the ULDA

- diagonal marking in accordance with AS 1742.2 in the area of the safety strip
- distinctive pavement surface finishing (e.g. paving) in the area of the safety strip
- distinctive pavement surface finish (e.g. green) in the area of the bicycle lane.

(Refer Austroads Part 14, page 128 for more details)

Shared lanes ('wide kerbside lane')

Where carriageway width does not permit full bicycle lanes, a 'wide kerbside lane' may be provided. These permit a vehicle to overtake a cycle within a lane while providing safe clearance. This facility is generally appropriate only where traffic speeds are 80 km/h or less and there is limited or no parking on road. Appropriate lane widths are shown in Table 3-7.

Table 3-7: Lane widths, wide kerbside lanes

Road speed (km/h)	60 km/h	80 km/h
Desirable	4.2 m	4.5 m
Acceptable range	3.7 – 4.5 m	4.3 – 5.0 m

3.4.2 Exclusive bicycle lanes

Exclusive bicycle lanes are generally the preferred solution where carriageway width permits. Appropriate lane widths are shown in Table 3-8.

Table 3-8: Lane widths, exclusive bicycle lanes

Road speed (km/h)	60 km/h	80 km/h
Desirable min.	1.5 m	2.0 m
Acceptable range	1.2–2.5 m	1.8 – 2.7 m

3.4.3 Off-road cycle facilities

Shared use path

Most 'bicycle paths' in Australia are actually 'shared use' paths; which are generally defined as pedestrian paths that bicycles may use.

Preferred design widths of these paths are shown in Table 3-9 below.

Table 3-9: Path widths, shared bicycle/pedestrian paths

	Local access path	Commuter path	Recreational path
Desirable	2.5 m	3.0 m	3.5 m
Acceptable range	2.0 – 2.5 m	2.0 – 3.5 m	3.0 – 4.0 m

Dedicated (exclusive use) bicycle paths

Dedicated bicycle paths are provided where it is desired to support cycling without intermingling with pedestrian traffic. They are rarely provided in urban areas as it is effectively impossible to prevent pedestrians from using the facility. However they may be desired in particular circumstances such in motorway corridors where pedestrian traffic is unlikely.

When designing individual paths an appropriate design speed should be selected. For dedicated bicycle paths this should be at least 30 km/h and as high as 50 km/h on downhill sections.

Preferred path widths for dedicated bicycle paths are in Table 3-10.

Table 3-10: Path widths, exclusive bicycle path

	Local access path	Main path
Desirable	2.5 m	3.0 m
Acceptable range	2.0 – 3.0 m	2.0 – 3.0 m

3.5 Strategy for Caloundra South

3.5.1 Strategic role of walking and cycling

Walking and cycling have been considered as an integral part of Caloundra South from both a transport and a recreational viewpoint.

3.5.2 Pedestrians

The 'villages and centres' plan for Caloundra South will result in the majority of residents being within a few hundred metres walk of local facilities (including primary schools). PB research has indicated that the average length people are willing to walk to shops is around 600 m. The areas that are within this distance of a town, district or neighbourhood centre under the Caloundra South Masterplan are shown in Figure 3-2.

These local centres will also be stops on the main public transport routes, enabling easy access to services and facilities further afield, without requiring the use of the car.

All roads and streets within Caloundra South will be designed with pedestrians in mind. This should include the provision of footpaths on both sides of all but the most quiet of local access streets to ensure high quality provision and connections. Local access streets will, where appropriate, be designed as slow speed mixed-mode environments. ~~Typical cross-sections for different street types are included in Section 5.~~

Additionally, pedestrians will be able to make use of the extensive 'shared trails network' for recreational purposes, to access local centres and to walk between neighbourhoods.



Figure 3-2: Typical (600 m) walking catchment from retail centres

3.5.3 Shared trails network

The shared trails network has been conceived as a way to link neighbourhoods and to provide recreational opportunities. They make use of the open space network and are segregated from traffic. As shared pathways, they are designed to be suitable both for pedestrians and cyclists, particularly the less experienced 'beginner' and 'cautious' riders.

They have been located to serve schools, especially primary schools, to encourage walking and cycling to schools.

The trails may also be incorporated into various special opportunities such as ecological interpretation walks that the open spaces may provide. They will support the wider Caloundra area through connections to current and proposed paths in adjacent areas (including Pelican Waters).

The shared trails network will follow a similar path to the off-road cycle network, as shown later in Figure 3-3.

3.5.4 Cycle network

An extensive bicycle network is proposed for Caloundra South. This is based on three 'layers' of facility to support beginner, cautious and experienced cyclists. This network will promote Caloundra South as being a cycle friendly city, where trips between the activity centres and other places of interest within the site would take no more than 10 minutes by bike.

Beginner

The beginner cyclist will prefer to avoid roads wherever possible. They will therefore be provided with a comprehensive network of off-road routes. These routes will be shared with pedestrians and are designed to link all neighbourhoods, neighbourhood centres and schools.

Cautious

Cautious users are willing to use less-busy streets where appropriate cycle facilities are provided. To encourage cautious users, the off-road network is augmented with a network of on-road bicycle lanes on the secondary sub-arterial road network.

These provide access to all neighbourhoods as well as faster routes to the major district centres.

Confident

Confident cyclists are willing to use busy roads and travel at higher speeds for longer distances. They generally prefer to avoid mixing with pedestrians as the speed differential makes such situations hazardous. To ensure safety, appropriately designed bicycle lanes and other cycle facilities should be included on the major road network.

High speed

High speed cyclists generally prefer to use a dedicated facility that is segregated to allow for longer distance, high-speed cycle commuting. These facilities should connect to other external networks to allow for onwards travel between activity centres.

The extensive network of green corridors throughout the Caloundra South site provides the opportunity to incorporate an off-road cycle network that will provide connections between all of the town, district and neighbourhood centres. The indicative off-road cycle network for Caloundra South is shown in Figure 3-3. Where the off-road cycle network intersects with a road, and a drainage structure is required (such as a culvert), a grade separated cycle crossing can also be included (subject to appropriate application of CPTED principles). This off-road network would be supported by on-road cycle provision on the higher order roads to allow coverage throughout the Caloundra South site.

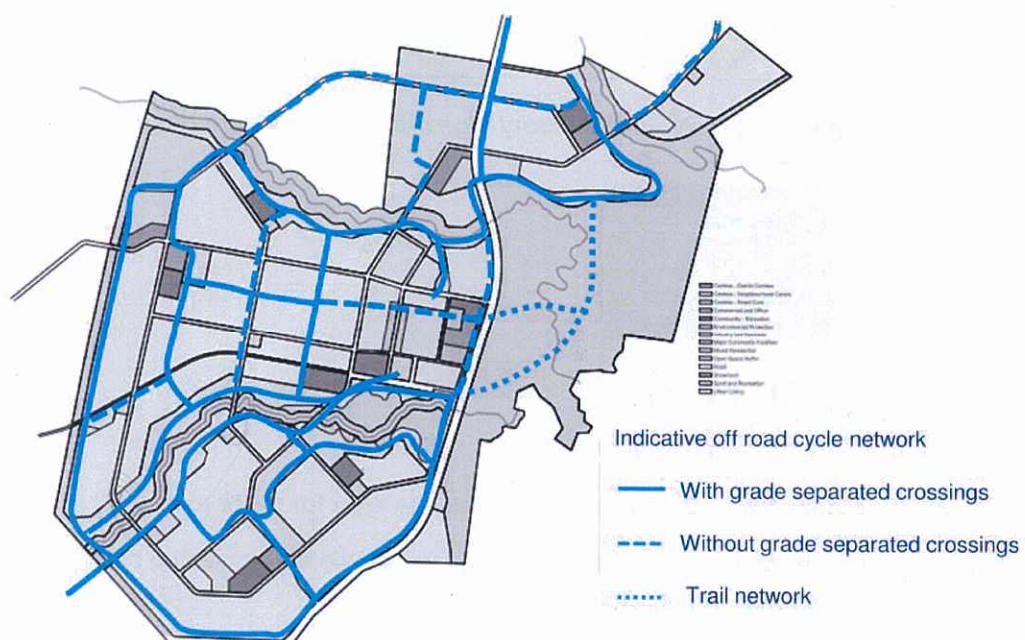


Figure 3-3: Indicative off-road cycle network for Caloundra South

3.5.5 Signage

Appropriate signage should be provided on all bicycle routes (see AS 1742.9—2000). These should include:

- regulatory signage as appropriate
- destination and distance information
- advisory signage (e.g. steep descent, road crossing) as appropriate
- some typical signs are illustrated on the following page.

Examples of these are shown in Figure 3-4, 3-5 and 3-6.



Figure 3-4: Used to signify a section of off-road path that is available for bicycles only



Figure 3-5: Typical advisory signs to be used where required



Figure 3-6: Destination and distance sign for cycle path

On off-road trails standard cycle signage can be supplemented by appropriate 'themed' signs where appropriate.

3.5.6 End of trip facilities

To encourage cycling, a range of end-of-trip facilities needs to be provided, including:

- racks
- lockers
- water fountains
- seating
- showers.

Bicycle racks should be provided at all major destinations, including shops, schools, parks and rail and bus stations. Showers and change facilities should be provided at workplaces and major transport interchange nodes. Bicycle parking should be designed in accordance with the relevant Australian standard (AS 2890.3-1993).

4. Public transport strategy

4.1 Policy review and strategic context

4.1.1 Connecting SEQ 2031

The Connecting SEQ 2031 provides an overarching transport strategy for SEQ. Specifically for public transport relevant to Caloundra South the following 'Signature Projects' (SP) are identified:

- Signature Rail Projects — Rail revolution: *UrbanLink* — higher frequency, all stops services all day seven days a week between Beerwah and Maroochydore on the Sunshine Coast; and *CoastLink* — fast express rail service from Brisbane to the Gold Coast and Brisbane to the Sunshine Coast, with a travel time of about one hour (SP2).
- Signature Bus Projects — *CoastConnect* — an *UrbanLink* bus service with priority from Maroochydore to Caloundra via Mooloolaba and Kawana Town Centre (SP9).
- Connecting SEQ 2031 also identifies some relevant public transport (PT) Principles including:
 - PT 1 — A system that is easy to use and understand
 - PT 2 — Provide a quality journey, from the decision to use public transport, to arrival at the destination
 - PT 3 — Develop a network that operates at a good level of service all day, with peak period supplementary services
 - PT 4 — Provide a clear network of high-frequency *UrbanLink* bus and rail services where passengers can 'turn up and go'
 - PT 5 — Use 'trunk and feeder' design to enable local access to key destinations across the region
 - PT 6 — Encourage people to access public transport by walking and cycling, while recognising the need for car feeder roles in some markets
 - PT 7 — Use fares products to encourage people to shift from car transport, and to manage and direct passenger growth.

A number of these projects and policies are utilised below in the development of a public transport strategy for Caloundra South.